

**Middle Creek Flood Damage Reduction and Ecosystem Restoration Project  
Proposition 13 Flood Protection Corridor Program  
Proposed Final Plan to Minimize Impacts on Adjacent Landowners**

Flood Protection Corridor Program Background

The Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Act of March 2000 (Proposition 13) created the Flood Protection Corridor Program (FPCP) administered by the California Department of Water Resources (DWR). The FPCP is authorized to fund projects providing nonstructural approaches to flood management, including the acquisition and restoration of wildlife habitat and agricultural land preservation. Proposition 13 requires DWR to ensure that a plan to minimize impacts on adjacent landowners is prepared and approved prior to acquiring any interest in land for the FPCP (Proposition 13, Section 79041). The plan must include the impact on floodwaters, the structural integrity of affected levees, diversion facilities, customary agricultural husbandry practices and timber extraction operations, and an evaluation with regard to the maintenance required for any facilities proposed to be constructed or altered. This plan has been prepared by the Lake County Watershed Protection District (District) as part of a FPCP grant awarded for the Middle Creek Flood Damage Reduction and Ecosystem Restoration Project in 2003. Acquisition of lands under the FPCP grant is currently scheduled to begin in 2005. [The above change is wrong---it was correct before the change was made – E.N.]

Description of the Middle Creek Flood Damage Reduction and Ecosystem Restoration Project

The Middle Creek Flood Damage Reduction and Ecosystem Restoration Project (Project) area, known previously as Robinson Lake, was "reclaimed" between 1900 and 1940 by constructing levees, creating a slough, reclaiming lake bottom, shoreline wetlands and floodplain for agricultural purposes. In 1958, the U.S. Army Corps of Engineers (Corps) added to the levee system, reclaiming additional shoreline wetlands. These projects resulted in the physical isolation of over 1,650 acres of marsh and floodplain from the largest tributaries of Clear Lake.

The levee system was originally constructed of material dredged from the nearby channels and was prone to failure. The Corps strengthened the levees with additional fill, however, due to poor foundation conditions and the substandard existing levees, the Corps levees failed during construction. Several attempts were made to reconstruct the levees; however, the levees were never constructed to the design standard (100-year level of protection). The levees are as much as three feet below design grade and have an inadequate cross-section.

The Corps recently determined that the levees will overtop during a 35-year flood event, unless emergency flood-fight measures are implemented. The area was evacuated in 1983, 1986, and 1998, with evacuation imminent in 1995. Extensive emergency flood fighting activity was required to prevent levee failures during those events. Recent

evaluation of the levees by the Corps indicates they provide approximately a four-year level of protection.

If the levees fail, flood damage would be extensive. There are 18 homes and numerous outbuildings subject to flooding if the levees fail. Up to 1,650 acres of agricultural and residential land could be flooded. Over three miles of public roads would be flooded or put at risk of flood damage. A major, high voltage PG&E transmission line crosses the Project area and is vulnerable to flood damage. Because flood depths are great (over five feet in most locations) and would linger for extended periods, potential flood damages are high.

In June 1999, the Corps, in cooperation with The Reclamation Board (Board) and the District, began a feasibility study that evaluated six alternative projects, including No Action, three restoration alternatives, a nonstructural, and a structural flood damage reduction alternative. The restoration alternatives all include reconnecting the area adjacent to Clear Lake and Rodman Slough, with the primary difference being the northern limit of the Project area. Structural repair and/or replacement of the levees was not found to be practical (benefit-cost ratio of 0.18), nor was a strict nonstructural project practical (benefit-cost ratio of 0.1). Therefore, a multipurpose project that includes nonstructural flood damage reduction and ecosystem restoration components was selected as the preferred alternative (benefit-cost ratio of 1.0) to reduce flood risk for the reclaimed area to an acceptable level.

The multipurpose Project consists of reconnecting Scotts and Middle Creeks to the historic Robinson Lake wetland and floodplain areas by breaching the existing levee system to create inlets that direct flows into the historically flooded area. Diversion of flows through the wetland area is estimated to reduce the phosphorus load from Middle and Scotts Creeks to Clear Lake by 40 percent. Environmental review as required by the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) was conducted concurrent with the feasibility study. The revised Final Feasibility Study/Environmental Impact Statement/Environmental Impact Report was issued in October 2003, certified under CEQA by the Board in February 2004 and with a Notice of Determination filed by the District on May 13, 2004.

The FPCP provides grants to local public agencies and nonprofit organizations for the development of nonstructural flood control alternatives to protect, create, and enhance flood protection corridors and floodplains while preserving or enhancing the agricultural use or wildlife values of the real property. In 2003, the District as the local Project sponsor was awarded a FPCP grant in the amount of \$5,214,000 to begin the acquisition of floodplain properties within the Project area. Although the available grant funds are not enough to fully implement the land acquisitions needed for the full Project, these FPCP funds will be utilized to begin acquiring flood prone residential property within the project area as the first step in implementing the full Project. Acquired properties will be encumbered with permanent conservation and flood easements in accordance with the above FPCP grant purposes.

There are 18 residential properties in the project area targeted for acquisition with FPCP funds. After residential properties are purchased, the residences, buildings and improvements on the properties will be demolished and the property will be revegetated. The levees and flood protection infrastructure will not be breached or altered as a result of the FPCP; therefore, the existing level of flood protection provided by the levee system will remain unchanged. The level of flood protection will not change until after the full Project is implemented.

Federal authorization of the entire Project is currently under consideration by Congress in the Water Resources Development Act of 2005. Since the FPCP is the first phase of implementing the full Project, it is anticipated that most of the funding expended for the FPCP will be considered a portion of the nonfederal share of entire Project cost. The full Project will have the following benefits:

Flood damage reduction benefits:

- Reduces flood risk by removing residential structures at risk of severe flooding as a result of levee failure. Implementation of the FPCP project will provide some of these benefits immediately by removing many residential structures from the floodplain.
- DWR currently maintains the existing portions of the Middle Creek Flood Control Project in the Project area. The full Project would remove or degrade approximately four miles of substandard levees, one pumping station and one weir structure from the Middle Creek Flood Control Project. The full Project would also result in lower operations and maintenance (O&M) costs (O&M currently estimated at \$160,000 per year), and emergency response costs (estimated in excess of \$300,000 per major flood event) for DWR and cooperating State and federal agencies.

Wildlife habitat benefits:

- Restore up to 1,400 acres of the 7,520 acres of historic wetlands in the Clear Lake Basin that have either been lost or severely impacted. This is a 79 percent increase in the Basin's existing wetland habitat. Restored habitat includes open water, seasonal wetlands, instream aquatic habitat, shaded aquatic habitat, and perennial wetlands. Additional upland habitat will be protected adjacent to the wetland and stream areas.
- Provide a significant increase in habitat for fish and wildlife. The full Project would greatly improve the bird-nesting habitat and increase the available spawning habitat for native and non-native fish. The area is also currently extensively used by migratory waterfowl.
- Preserve the fish and wildlife resources and the cultural resources in the full Project area.
- Several special-status wildlife species could benefit from the creation of wetland, open water, and riparian habitats in the expanded floodplain.

Water quality benefits:

- Sediment is the primary nutrient source (97 percent of Clear Lake's total phosphorus load is sediment bound) contributing to the cultural eutrophication of Clear Lake. It has been estimated that the current sediment and phosphorus load is twice the pre-European sediment load. Approximately 71 percent of the sediment and phosphorus entering Clear Lake is from the Scotts and Middle Creek watersheds. It has been estimated that the full Project would remove up to 40 percent of phosphorus entering Clear Lake from Middle and Scotts Creeks. Reduced phosphorus concentrations in Clear Lake would potentially reduce the chlorophyll concentrations by 33 percent.
- Wetlands are known to efficiently remove nitrogen from the water column. Because the Project area is hydraulically connected to Clear Lake, it would provide some nitrogen removal benefits to Clear Lake. These benefits are unknown and have not been quantified.
- Improved water quality in Clear Lake will reduce the cost of treating lake water to drinking water standards.
- Recreation and tourism will be enhanced by improving the water quality in Clear Lake. In 1994, the USDA Soil Conservation Service estimated that \$7 million in tourism is lost annually due to water quality issues in Clear Lake.

Vector control benefits:

- The full Project will have an unknown, and possibly beneficial, impact on vector control issues in the area. A diverse wetland and riparian community will replace several hundred acres of rice fields and flood-irrigated pasture. An expected increase in natural predators may result in lower insect populations in the area.

Evaluation of Impact of the FPCP on Floodwaters in the Vicinity of the Project

As the FPCP is only acquiring some of the flood prone residential property, and no alterations will be made to drainage patterns and/or flood protection facilities until the full Project is implemented, there will be no interim impact on floodwaters or the existing level of flood protection in the overall area.

Evaluation of Impacts on Structural Integrity of Affected Levees

As the FPCP is only acquiring flood prone residential property, and no alterations will be made to drainage patterns and/or flood protection facilities, there will be no impact on the structural integrity of the levees. The levees will continue to be maintained until all lands protected by the levees are acquired and the full Project is implemented.

The flood control facilities in the Project area are maintained by DWR as State Maintenance Area No. 17 (MA 17) and by Reclamation District (RD) No. 2070. DWR maintains 3.9 miles of levee, the Middle Creek Pumping Plant, and the Highline Diversion Structure. Funding for MA 17 is by an assessment on each property benefited. RD 2070 maintains a separate stormwater pumping plant. Funding for

RD 2070 is by an assessment on each property benefited. These assessments must be paid to ensure continued maintenance of the flood control facilities.

To minimize impacts to the structural integrity of the affected levees until full implementation of the Middle Creek Project, the District will provide:

- Payment of the MA 17 annual assessment on the purchased properties in order to maintain the current level of flood protection until all Project lands and rights of way are acquired and other Project features are built.
- Payment of RD 2070 annual assessment on the purchased properties in order to maintain the current level of flood protection until all Project lands and rights of way are acquired and other Project features are built.

All costs for property maintenance will be paid from an interest-bearing maintenance trust fund to be established by the District as provided by Proposition 13, Section 79044 (a) (1), by reserving FPCP funds equaling 20 percent of the cost of all property acquired.

#### Evaluation of Impacts on Diversion Facilities

No diversion facilities will be constructed or altered; therefore, there will be no impacts from the FPCP.

#### Evaluation of Impacts on Customary Agricultural Husbandry Practices

The Project requires acquiring residential and agricultural properties in fee simple, so that they can eventually be restored to inundated lakebed or floodplain and associated fish and wildlife habitats, in order to achieve flood damage reduction and ecosystem restoration benefits that will make the Project cost effective. Existing agricultural operations that are incidental to the residential use will be affected on a parcel-by-parcel basis as lands are acquired. Since the properties will ultimately be managed primarily for fish and wildlife values in open water, wetlands, shoreline, or riparian habitats, agricultural activities on the purchased parcels will eventually cease.

The FPCP-acquired properties will also be managed to minimize indirect impacts to adjacent parcels. Structures and improvements will be demolished, relocated and/or abandoned, and temporary erosion control measures will be implemented. Maintenance activities proposed under the FPCP until full implementation of the Middle Creek Project include:

- Properties will be controlled and inspected on an as-needed basis to ensure damage is not done to the lands by illegal dumping of garbage, off-road vehicle use, etc. Fencing will be provided on an as-needed basis.
- Grass and weeds will be managed on the properties in order to prevent damage to neighboring properties. This may be accomplished by mowing or disking the perimeter of the property.

All costs for property maintenance will be paid from a maintenance trust fund to be established by the District as provided by Proposition 13, Section 79044 (a) (1). In the interim until full Project implementation, acquired land may be leased for agricultural purposes that are consistent with the overall goals of the FPCP, and lease revenues will

be deposited into the maintenance trust fund account in order to further offset the described maintenance costs.

Although the full Project will eventually result in the loss of agricultural use on lands within the designated Project area, there will not be any significant adverse impacts to the existing agricultural uses on adjacent properties after Project implementation.

#### Evaluation of Impacts on Timber Extraction Operations

There are no timber extraction operations in the vicinity of the Project; therefore, the FPCP will not impact any timber extraction operations.

#### Evaluation of Impacts on Maintenance of Facilities Proposed to be Altered or Constructed

The FPCP will acquire flood prone residential property, and no existing flood control facilities will be altered until the full Project is implemented, as previously described. At that time, the levees will be degraded and other ecosystem restoration features and facilities will be constructed. In the interim, all levees and other flood control facilities of the existing Project will be maintained in order to continue existing levels of flood protection.

After the District purchases properties under the FPCP, the District will assume maintenance responsibility for those properties utilizing money in the trust fund. It is anticipated that maintenance will be ongoing for several years before the Project is fully implemented, even after the Project has been federally authorized. Currently, the length of time that the properties must be maintained prior to full Project implementation is unknown.

The interest-bearing maintenance trust fund will provide for maintenance of the FPCP-acquired properties, and assist in maintenance of the existing MA 17 and RD 2070 portions of the Middle Creek Flood Control Project until completion of the full Project. As the trust fund will be paying the assessments on the acquired properties, these costs will not be passed on to the remaining property owners. We have estimated an annual cost of \$22,000 to pay MA 17 and RD 2070 assessments for the acquired properties. Other maintenance costs for the properties are estimated at approximately \$6,000 per year.

In the foreseeable future, the estimated annual cost for maintenance is likely to exceed the available interest accruing in the trust fund. This may result in a decreasing balance in the trust fund; however, the fund should be sufficient to maintain the properties until the full Project is implemented. Table 1 provides an estimate on the trust fund expenditures and balance for the next 25 years.

**TABLE 1**  
**OPERATION AND MAINTENANCE BUDGET ESTIMATE**  
**TRUST FUND CASH FLOW PROJECTION**  
**MIDDLE CREEK FLOOD DAMAGE REDUCTION AND ECOSYSTEM RESTORATION PROJECT**  
**FLOOD PROTECTION CORRIDOR PROGRAM**

<b>Year</b>	<b>Trust Fund Balance<sup>1</sup></b>	<b>O&amp;M Cost<sup>2</sup></b>	<b>Interest Earned<sup>3</sup></b>
2006	\$800,000	\$28,000	\$24,000
2007	\$796,000	\$29,400	\$23,880
2008	\$790,480	\$30,870	\$23,714
2009	\$783,324	\$32,414	\$23,500
2010	\$774,411	\$34,034	\$23,232
2011	\$763,609	\$35,736	\$22,908
2012	\$750,781	\$37,523	\$22,523
2013	\$735,782	\$39,399	\$22,073
2014	\$718,457	\$41,369	\$21,554
2015	\$698,642	\$43,437	\$20,959
2016	\$676,164	\$45,609	\$20,285
2017	\$650,839	\$47,890	\$19,525
2018	\$622,475	\$50,284	\$18,674
2019	\$590,865	\$52,798	\$17,726
2020	\$555,793	\$55,438	\$16,674
2021	\$517,029	\$58,210	\$15,511
2022	\$474,330	\$61,120	\$14,230
2023	\$427,439	\$64,177	\$12,823
2024	\$376,086	\$67,385	\$11,283
2025	\$319,983	\$70,755	\$9,599
2026	\$258,828	\$74,292	\$7,765
2027	\$192,300	\$78,007	\$5,769
2028	\$120,062	\$81,907	\$3,602
2029	\$41,757	\$86,003	\$1,253
2030	-\$42,993	\$90,303	-\$1,290

**Assumptions**

<sup>1</sup> The trust fund is fully established and all costs are realized in the first year (FY 2006). The estimate is based on four million dollars (\$4,000,000) of property being acquired.

<sup>2</sup> Annual operation and maintenance costs increase by five percent (5%) per year

<sup>3</sup> Interest earned on trust fund averages three percent (3%) per year

**O&M Costs are estimated as follows:**

Inspections and cleanup	\$2,000
Mowing	\$1,000
MA-17 Assessment	\$18,769
RD 2070 Assessment	\$3,106
Administrative Costs	\$3,125
<b>Total</b>	<b>\$28,000</b>



Any funds remaining in the trust fund at the time of full Project completion will then be used to maintain the properties acquired under the FPCP in accordance with the conservation and flood easements and any other Project requirements. In the event that the District ever transfers the land to another public agency or nonprofit organization, the District shall also transfer the ownership of the trust fund established for purposes of maintaining the FPCP lands, in accordance with Proposition 13, Section 79044 (a) (2).

In addition to the minimization of impacts to adjacent landowners afforded by the District's proposed maintenance activities, during the implementation of the full Project all construction activities will minimize all potentially adverse impacts by implementing mitigation measures adopted during the Project's NEPA/CEQA review and certification process. A Notice of Determination was filed with the Lake County Clerk of the Board on May 13, 2004, stating that an Environmental Impact Statement/Environmental Impact Report was prepared for the Project, mitigation measures are a condition of Project approval, a statement of Overriding Considerations was adopted, and that findings were made pursuant to the provisions of CEQA. All environmental documentation developed for the Project under NEPA and CEQA may be reviewed by contacting the District or the Board for more information.

### Summary and Conclusion

This plan describes the overall Middle Creek Flood Damage Reduction and Ecosystem Restoration Project that was jointly proposed by the Corps, the Board, and the District in 2005, and describes a plan to minimize impacts on adjacent landowners for associated flood prone property acquisitions and maintenance activities to be funded by the Flood Protection Corridor Program. The plan contains evaluations of the FPCP impacts on existing conditions of floodwaters, the structural integrity of affected levees, diversion facilities, customary agricultural husbandry practices and timber extraction operations, and with regard to the maintenance required for any facilities that are proposed to be constructed or altered by the Project. In summary, it is not anticipated that the development of the FPCP and/or its subsequent maintenance will have any significant adverse impacts upon the existing adjoining property owners, land use practices, or flood control facilities, and the FPCP is very beneficial in that it will substantially contribute towards the acquisition of flood prone properties in support of the full Project.

Certification of the Middle Creek Flood Protection Corridor Program Plan to Minimize Impacts to Adjacent Landowners by the Lake County Watershed Protection District and the California Department of Water Resources: [Where did the Watershed title come from? The other title is correct according to FPCP records- E.N.]

Plan Certification by the District:

The undersigned hereby certifies that the Lake County Watershed Protection District will implement this Plan to Minimize Impacts to Adjacent Landowners as required by the Flood Protection Corridor Program administered by the California Department of Water Resources.

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G. R. Shaul, Director  
Lake County Watershed Protection District

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Date

Plan Approval by DWR:

This Plan to Minimize Impacts to Adjacent Landowners has been reviewed and approved by the undersigned representing the California Department of Water Resources in administering the Flood Protection Corridor Program as provided by the Safe Drinking Water, Clean Water, and Flood Protection Act of March 2000.

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Leslie F. Harder, Jr., Chief  
Division of Flood Management  
California Department of Water Resources

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Date